

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
15 January 2004 (15.01.2004)

PCT

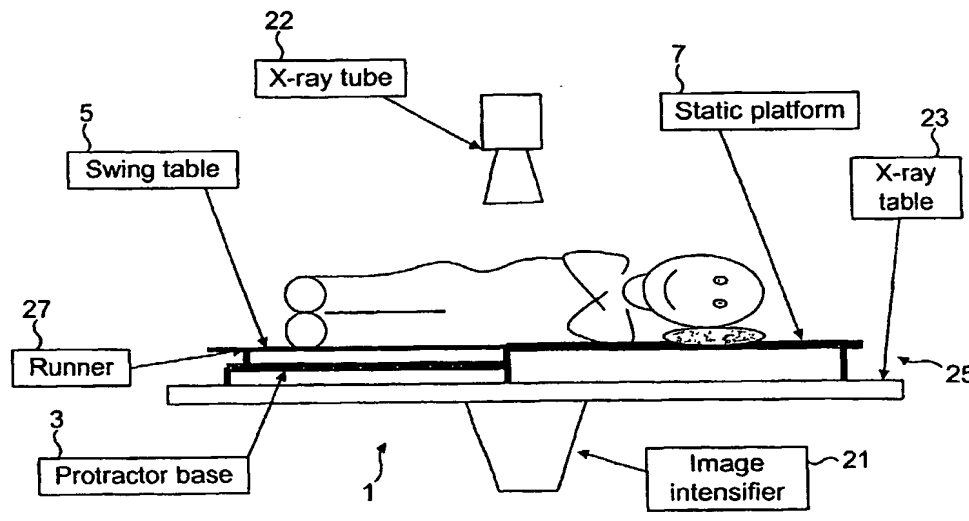
(10) International Publication Number  
**WO 2004/004570 A1**

- (51) International Patent Classification<sup>7</sup>: **A61B 6/04**, 5/055, 5/11, H04N 5/32, G06T 7/20
- (74) Agents: **BASSIL, Nicholas, Charles et al.**; Kilburn & Strode, 20 Red Lion Street, London WC1R 4PJ (GB).
- (21) International Application Number: PCT/GB2003/002934
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (22) International Filing Date: 8 July 2003 (08.07.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
0215848.3 9 July 2002 (09.07.2002) GB  
0226264.0 11 November 2002 (11.11.2002) GB
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- (71) Applicant (*for all designated States except US*): **ANGLO-EUROPEAN COLLEGE OF CHIROPRACTIC LTD** [GB/GB]; 13-15 Parkwood Road, Bournemouth BH5 2DF (GB).
- (72) Inventor; and
- (75) Inventor/Applicant (*for US only*): **BREEN, Alan** [GB/GB]; Institute for Musculoskeletal Research and Clinica, 1 Implenentation, 13-15 Parkwood Road, Bournemouth, BH5 2DF (GB).
- Declarations under Rule 4.17:**  
— *as to the identity of the inventor (Rule 4.17(i)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK,*

[Continued on next page]

(54) Title: METHOD FOR IMAGING THE RELATIVE MOTION OF SKELETAL SEGMENTS

Passive Motion Platform - Side Elevation



(57) Abstract: Apparatus provided for the measurement of skeletal joint motion in a subject which comprises a passive motion device, an imaging device and a processing system incorporating a means for real time digital sampling of images of moving joints, means for recognising templates attributed to individual bones and tracking these automatically using cross-correlation functions and means for geometric transformation of the positional data to graphically display their relative motion over time. Also provided is a method for the automated measurement of the relative motion of skeletal structures in vivo using such apparatus and a method for the diagnosis of a pseudoarthrosis in a subject which comprises the use of such apparatus.